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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/572,852

12/07/2006

Satoshi Matsuura

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EXAMINER

LIN, KUANG Y

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

03/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/572,852	Applicant(s) MATSUURA ET AL.	
	Examiner Kuang Y. Lin	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1793

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 3-6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over either US 2001/0039710 to Nakao et al. and further in view of US 4,473,103 to Kenney et al.

Nakao et al. shows to heat the blanks of aluminum/alumina composite to a temperature **equal to the solidus temperature (Ta)** of aluminum alloy or lower before pressing the blank into a split die. Thus, Nakao et al. substantially shows the invention as claimed except that they do not prepare the composite billet by mixing the reinforcing material and the molten metal matrix material. However, Kenney et al. show that it is conventional to prepare composite article continuously by mixing the reinforcing material and the molten metal matrix

material and then solidify the mixture to form the same. Thus, the use of mixing technique in lieu of infiltration technique presents no novel or unexpected result and solves no stated problem and would have been obvious to those of ordinary skill in the composite article making art, In re Kuhle, 188 USPQ 7. With respect to claim 4, it would have been obvious to provide an insulation material around the billet to prevent it from heat loss and thus maintaining a constant temperature before pressing step.

4. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over either US 2001/0039710 to Nakao et al. and further in view of US 4,473,103 to Kenney et al. as applied to claim 1 above, and further in view of JP 2-220760 to Ishizuka.

Ishizuka shows to provide a billet having a height varying from one portion to another (see figures 1 and 3), i.e. the billet does not have to be in the shape of cubic, cylindrical, disk, etc. Thus, the configuration or shape of the billet in the primary references depends on the technique of preparing the billet. It would have been obvious to provide the billet of Ishizuk in the process of the primary references if the billet were prepare with the process of Ishizuk.

5. Claims 1, 3-6, 8, and 9 are also rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,250,364 to Chung et al.

Chung et al. show to form a composite article having a non-uniform distribution of reinforcing particles in the metal matrix. The raw material for semi-solid forging is made from powder mixture of metal matrix material and the reinforcement material. Slugs are heated to a temperature where the metal matrix starts to

become liquid (i.e. above solidus temperature) but still supports its own weight (col. 4, line 25+). One of the composite raw material is aluminum/alumina (col. 1, line 57+; claims 2 and 3). Thus, Chung et al. substantially show the invention as claimed except that they do not show the specific concentration gradient of reinforcement phase as claimed. However, they do disclose to provide reinforcement concentration gradient in the billet to form a composite article having a desired reinforcement concentration gradient. It would have been obvious to design a specific reinforcement concentration gradient in the billet such that to obtain composite article having a particular reinforcement concentration gradient as claimed. With respect to claim 4, it would have been obvious to provide an insulation material around the billet to prevent it from heat loss and thus maintaining a constant temperature before pressing step.

6. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over either US 6,250,364 to Chung et al. and further in view of US 4,473,103 to Kenney et al. as applied to claim 1 above, and further in view of JP 2-220760 to Ishizuka.

Ishizuka shows to provide a billet having a height varying from one portion to another (see figures 1 and 3), i.e. the billet does not have to be in the shape of cubic, cylindrical, disk, etc. Thus, the configuration or shape of the billet in the primary references depends on the technique of preparing the billet. It would have been obvious to provide the billet of Ishizuka in the process of the primary references if the billet were prepared with the process of Ishizuka.

7. Applicant's arguments filed Feb. 27, 2008 have been fully considered but they are not persuasive.

a. Applicant in page 6, last para. of the response stated that the heating temperature employed in Nakao et al. ranges from the solidus temperature of aluminum alloy minus 50 degrees C., as specified in claim 1 of Nakao et al. However, Nakao et al. do disclose to heat the blanks to a temperature equal to solidus temperature (see [0015]). Thus, the invention as claimed does not define over the prior art reference.

b. With respect to the teaching of Ishizuka, figures 1 and 3 of Ishizuka do show that the configuration of billets does not have to be in the shape of cubic, cylindrical, disk, etc. for forming a composite article.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuang Y. Lin whose telephone number is 571-272-1179. The examiner can normally be reached on Monday-Friday, 10:00-6:30,.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kuang Y. Lin/
Primary Examiner, Art Unit 1793

3-19-08